AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (CURRENTLY AMENDED) A method of diagnosing a patient using an internal imaging antibody comprising:

(a) selecting a ligand that binds to a biological receptor selected from at least one of steroids, cardiac glycosides, somatostatin, bombesin, cholecystokinen, neurotensin, and ~~heat sensitive bacterioendotoxin~~ heat-stable toxin;

(b) preparing a first generation antigen of the receptor binding ligand;

(c) preparing a first generation of monoclonal antibodies against the first generation antigen and isolating monoclonal antibodies directed to the receptor binding ligands;

(d) preparing monoclonal anti-idiotypic antibodies against the first generation antibodies and isolating the internal image anti-receptor antibodies from said anti-idiotypic antibodies;

(e) conjugating said internal image anti-receptor antibodies to a photoactive molecule;

(f) administering an effective concentration of the internal image antibody conjugate in step (e) to a patient and allowing the conjugate to accumulate at a target site within the patient; and

g) exposing said target site to light sufficient to activate the photoactive molecule to image the target site.

2. (PREVIOUSLY PRESENTED) The method of claim 1 wherein said receptor-binding ligand is selected from the group consisting of drugs, hormones, peptides, carbohydrates, nucleosides, peptidomimetic, glycomimetics, and biosynthetic intermediates.

3. (PREVEIOUSLY PRESENTED) The method of claim 1 wherein said photoactive molecule is a dye selected from the group consisting of cyanines, indocyanines, phthalocyanines, rhodamines, phenoxazines, phenothiazines, phenoselenazines, fluoresceins, porphyrins, benzoporphyrins, squaraines, corrins, croconiums, azo compounds, methine dyes, and indolenium.

4. (PREVIOUSLY PRESENTED) The method of claim 1 wherein said effective concentration of the internal image antibody conjugate ranges from about 0.1 mg/kg body weight to about 500 mg/kg body weight.

5. (PREVIOUSLY PRESENTED) The method of claim 1 wherein the effective concentration of the internal image antibody conjugate ranges from about 0.5 mg/kg body weight to about 2 mg/kg body

weight.

6. (PREVIOSULY PRESENTED) The method of claim 1 wherein imaging is selected from at least one of absorbance, fluorescence, scattering, and combinations thereof.

7. (PREVIOUSLY PRESENTED) The method of claim 1 wherein said target site is selected from the group consisting of tumors, lesions, necrotic regions, ischemic regions, thrombic regions, inflammatory regions, impaired vasculature, and combinations thereof.

8. (CURRENTLY AMENDED) A method of performing a therapeutic procedure in a patient using an internal imaging antibody comprising:

(a) selecting a ligand that binds to a biological receptor selected from at least one of steroid, cardiac glycoside, somatostatin, bombesin, cholecystokinen, neurotensin, and ~~heat sensitive bacterioendotoxin~~ heat-stable toxin;

(b) preparing a first generation antigen of the receptor-binding ligand;

(c) preparing a first generation of monoclonal antibodies against the first generation antigen and isolating monoclonal antibodies directed to the receptor-binding ligands;

(d) preparing monoclonal anti-idiotypic antibodies against the first generation antibodies and isolating the internal image anti-receptor antibodies from said anti-idiotypic antibodies;

(e) conjugating said internal image anti-receptor antibodies to a photoactive molecule;

(f) administering an effective concentration of the internal image antibody conjugate in step (e) to a patient and allowing the conjugate to accumulate at a target site; and

(g) exposing said target site to light sufficient to activate the photoactive molecule and treat the target site.

9. (PREVIOULSY PRESENTED) The method of claim 8 wherein said receptor-binding ligand is selected from the group consisting of drugs, hormones, peptides, carbohydrates, nucleosides, peptidomimetics, glycomimetics, and biosynthetic intermediates.

10. (PREVSIOULY PRESENTED) The method of claim 8 wherein said photoactive molecule is a dye.

11. (PREVIOUSLY PRESENTED) The method of claim 10 wherein said dye is selected from the group consisting of benzenes, polyfluorobenzenes, naphthalenes, naphthoquinones, anthracenes, anthraquinones, phenanthrenes, tetracenes, naphthacenediones, pyridines, quinolines,

isoquinolines, indoles, isoindoles, pyrroles, imidiazoles, pyrazoles, pyrazines, purines, benzimidazoles, benzofurans, dibenzofurans, carbazoles, acridines, acridones, phenanthridines, thiophenes, benzothiophenes, dibenzothiophenes, xanthenes, xanthones, flavones, coumarins, and anthacylines.

12. (PREVIOUSLY PRESENTED) The method of claim 8 wherein said photoactive molecule further comprises a precursor for producing reactive intermediates.

13. (PREVIOUSLY PRESENTED) The method of claim 12 wherein said precursor is selected from the group consisting of azides ($-N_3$), azo compounds (-N=N-), and sulfenates (-O-S-).

14. (PREVIOUSLY PRESENTED) The method of claim 8 wherein said effective concentration of the internal image antibody conjugate ranges from about 0.1 mg/kg body weight to about 500 mg/kg body weight.

15. (PREVIOUSLY PRESENTED) The method of claim 8 wherein the effective concentration of the internal image antibody conjugate ranges from about 0.5 mg/kg body weight to about 2 mg/kg body weight.

16. (PREVIOUSLY PRESENTED) The method of claim 8 wherein said target site is selected from the group consisting of tumors, lesions, necrotic regions, ischemic regions, thrombic regions, inflammatory regions, impaired vasculature, and combinations thereof.

17. (PREVIOUSLY PRESENTED) A method of diagnosing a condition in a body region of a patient comprising

administering to a patient a photodiagnostic composition comprising an internal image antibody to a biological receptor conjugated to a photoactive dye at a dose effective for photodiagnosis;

accumulating said photodiagnostic composition at said body region to be diagnosed;

thereafter providing light sufficient to activate said photoactive dye in said body region to image said body region and diagnose a condition in said patient.

18. (CURRENTLY AMENDED) The method of claim 17 wherein said antibody is directed to a receptor selected from the group consisting of steroids, cardiac glycosides, somatostatin, bombesin, cholecystokinen, neurotensin, and ~~heat sensitive bacterioendotoxin~~ heat-stable toxin.

19. (PREVIOUSLY PRESENTED) The method of claim 17 wherein light is provided at a wavelength in the range of about 300 to 1200 nm.

20. (PREVIOUSLY PRESENTED) The method of claim 17 wherein imaging is by a method selected from the group consisting of absorbance, fluorescence, scattering, and combinations thereof.

21. (PREVIOUSLY PRESENTED) The method of claim 17 wherein said effective dose is in the range of about 0.1 mg/kg to about 500 mg/kg body weight.

22. (PREVIOUSLY PRESENTED) A method of performing a therapeutic procedure for a pathological condition in a body region of a patient comprising

administering to a patient a phototherapeutic composition comprising an internal image antibody to a biological receptor conjugated to at least one photoactive moleule at a dose effective for phototherapy;

accumulating said phototherapeutic composition at said body region to be treated; and

thereafter providing light sufficient to activate said photoactive molecule in said body region to treat said patient.

23. (CURRENTLY AMENDED) The method of claim 22 wherein said antibody is directed to a receptor selected from the group consisting of steroids, cardiac glycosides, somatostatin, bombesin, cholecystokinen, neurotensin, and ~~heat-sensitive bacteriocndotoxin~~ heat-stable toxin.

24. (PREVIOUSLY PRESENTED) The method of claim 22 wherein light is provided at a wavelength in the range of about 300 to 1200 nm.

25. (PREVIOUSLY PRESENTED) The method of claim 22 wherein said effective dose is in the range of about 0.1 mg/kg to about 500 mg/kg body weight.

26. (PREVIOUSLY PRESENTED) The method of claim 22 wherein said therapeutic procedure is selected from the group consisting of treating ischemia, treating impaired vasculature, treating a thombus, inducing necrosis, inducing apoptosis, and combination thereof.

27. (PREVIOUSLY PRESENTED) The method of claim 22 wherein said photoactive molecule acts by at least one of a Type I mechanism, a Type II mechanism, or combinations thereof.